INFORMATICS

Reference Material for Teachers and Students to Support Curriculum Guideline

Ministry
of
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Reference Books

A.E.D.S. <u>Layman's Guide to the Use of Computers</u>.
Washington: The Association for Educational Data Systems, 1971.
This booklet is primarily devoted to a discussion of the uses
of computers in education.

Arnold, Robert R.; Hill, Harold C.; and Nichols, Aylmer V.
<u>Modern Data Processing</u>. New York: John Wiley & Sons, 1969.
This basic text provides a broad insight into the field of
data processing for those desiring a general knowledge.

Awad, Elias M, and Data Processing Management Association.
<u>Automatic Data Processing Principles and Procedures</u>.
2nd ed. Englewood Cliffs, N.J.: Prentice-Hall, 1970.
This book provides a comprehensive survey of the
data-processing field with special emphasis on
programming concepts and systems design.

Awad, Elias M. <u>Business Data Processing</u>. 3rd ed. Englewood
Cliffs, N.J.: Prentice-Hall, 1971.
This text provides a comprehensive, current, and easy-to-read
introduction to the subject with a strong emphasis on the
computer. It does not discuss sociological considerations. An
extensive bibliography of books and periodicals is appended.

Benice, Daniel D. <u>Introduction to Computers and Data Processing</u>.
Englewood Cliffs, N.J.: Prentice-Hall, 1970.
This elementary introduction provides an up-to-date survey of the
field. Included are separate chapters on flowcharting and five
programming languages. Sociological aspects are not covered.

Benice, Daniel D. <u>Computer Selections</u>. New York: McGraw-Hill
Book Company, 1971.
This book consists of fourteen in-depth reports written by
specialists in the field. Some of the reports, such as "Computer
Programs in Professional Football" touch on applications not
often discussed.

Bohl, Marilyn. <u>Information Processing</u>. Chicago: Science Research
Associates, 1971.
This book provides a comprehensive picture of the technical
aspects of computers, computer systems, and information
processing.

⌖ The maple leaf indicates a Canadian publication

Boore, William F., and Murphy, Jerry R. The Computer Sampler:
Management Perspectives on the Computer. New York: McGraw-Hill
Book Company, 1968.
This book of 31 selected readings is designed to give an under-
standing of the present and future capabilities and uses of
computers. Its broad scope makes it useful for reference or
research.

Brown, John A. Computers and Automation. New York: ARCO Publish-
ing Company, 1968. (In Toronto: General Publishing Company.)
The broad sphere of computers and automation is covered in this
book by means of clear, concise sections. Its format makes it
particularly useful as a reference book for students.

Clark, Frank J. Information Processing. Pacific Palisades, Calif.:
Goodyear Publishing Company, 1970. (In Toronto: Prentice-Hall of
Canada.)
This text surveys the field of information processing in broad
but concise terms. Its chief use would be as a reference source.

Cole, R.W. Introduction to Computing. New York: McGraw-Hill Book
Company, 1969.
This book covers computing overview, the history of the computer
and its language, algorithms, software, impact and elements of
PL/1 programming and structure.

Crawford, F.R. Introduction to Data Processing. Englewood Cliffs,
N.J.: Prentice-Hall, 1968.
This book is a by-product of an IBM publication. The whole
spectrum of data processing is covered, beginning with the abacus
and ending with programming systems.

Crowley, Thomas H. Understanding Computers. New York: McGraw-Hill
Book Company, 1967.
This paperback provides a brief survey of the computer field in
theoretical terms.

Davenport, William P. Modern Data Communication Concepts,
Language, and Media. New York: Hayden Book Company, 1971. (In
Toronto: General Publishing Company.)
This book deals with communications techniques and their relation
to computers. Although basically a technical book, it explains
many communications concepts in clear, understandable terms. It
is a useful reference book.

Davis, Gordon B. Computer Data Processing. New York: McGraw-Hill
Book Company, 1969.
This college level text provides a very thorough analysis of the
information processing field and would be useful as a reference
book for teachers or students.

2

Desmonde, William H. Computers and Their Uses. 2nd ed. Englewood Cliffs, N.J.: Prentice-Hall, 1971.
Although written for the advanced student, this book includes a number of sections suitable for student research. Chapter 11, "The Conquest of the Physical Universe", is particularly pertinent.

Dippel, Gene, and House, William C. Information Systems Data Processing and Evaluation. Glenview, Ill.: Scott, Foresman and Company, 1969.
The comprehensive coverage makes this book suitable for reference purposes.

Dodd, K.N. Data Processing. London: English Universities Press, 1969. (In Toronto: General Publishing Company Limited).
Computer applications in business such as banking, insurance, and the stock market are discussed in this English publication.

Emerick, P.L., and Wilkinson, J.W. Computer Programming for Business and Social Science. Homewood, Ill.: Richard D. Irwin, 1970. (Toronto: Clarke, Irwin and Company.)
This text focuses on solving problems in business, education, and the social sciences with the aid of a computer. It discusses the basic instructions used in solving elementary and advanced problems. It concentrates on FORTRAN language but introductions are also given to ALGOL, COBOL, BASIC, and PL/1.

Farina, Mario V. Flowcharting. Englewood Cliffs, N.J.: Prentice-Hall, 1970.
Initial formal instruction in flowcharting techniques is provided in this text under two divisions--basic concepts and advanced concepts. Its simple, step-by-step approach is related to computer problems and can be easily understood by beginning students.

Feldzamen, A.N. The Intelligent Man's Easy Guide to Computers. New York: David McKay and Company, 1971. (In Toronto: General Publishing Company.)
Written for the layman, this informative book examines the computerized society in down-to-earth and easy-to-read terms.

Fischer, Shannon. How Computer Programming Works. New York: Cowles Book Company, 1970. (In Toronto: General Publishing Company.)
Computing and other forms of automated data processing are discussed in this very readable book. Special emphasis is given to COBOL programming.

Forsythe, Alexandra I.; Keenan, Thomas A.; Organick, Elliott I.; and Stenberg, Warren. Computer Science: A First Course. New York: John Wiley & Sons, 1969.
Chapter 1 on algorithms and computers and chapter 2 on flowchart language are presented in simple conceptual terms. Chapter 9 is devoted to tree diagrams.

Freeman, Herbert M.; Hanna, Marshall J.; and Kahn, Gilbert. Accounting 10/12: Part IV, Business Data Processing Fundamentals. New York: McGraw-Hill Book Company, 1968.
This section of Accounting 10/12 (it may be purchased separately) looks at data processing primarily from the viewpoint of accounting applications. A companion series of transparencies prepared by David H. Weaver is available.

✦ Furneaux, H. R., and Joice, G. E. Introductory Data Processing Projects. Toronto: J. M. Dent and Sons (Canada) Ltd., 1969.
This student workbook illustrates the basic principles of data processing by means of processing source documents for a fictitious company. It will be particularly useful where the course is being taught without the use of sophisticated equipment.

Gruenberger, Fred, ed. Fourth Generation Computers User Requirements and Transition. Englewood Cliffs, N.J.: Prentice-Hall, 1970.
This book contains 13 papers written at an advanced level for a professionals' symposium. One paper, "The Significance of the Next Generation", traces the evolution of computers through the first three generations and speculates on the fourth generation.

Kahn, Gilbert. Business Data Processing: Basic Principles and Applications. New York: McGraw-Hill Book Company, 1966.
This is a simple, non-exhaustive student text intended to be used as a three- or four-week sequence in already established business courses.

Keys, William J., and Cashman, Thomas J. Basic Principles of Data Processing. New York: McGraw-Hill Book Company, 1968.
Unit record equipment is emphasized in this brief text.

Langenbach, Robert G. Introduction to Automated Data Processing. Englewood Cliffs, N.J.: Prentice-Hall, 1968.
This book presents a broad introduction to the field of data processing, from keysorting and microfilming to magnetic coding and character recognition. The book is well illustrated, simple in approach, and easy to read.

Lott, Richard W. Basic Data Processing. 2nd ed. Englewood Cliffs, N.J.: Prentice-Hall, 1971.
The concerns of the systems analyst are expressed in this basic text. In describing fundamental concepts, the author emphasizes factors such as usefulness to management, cost savings, and guarding against misuse.

Martin, James. Telecommunications and Computer. Englewood Cliffs, N.J.: Prentice-Hall, 1969.
The increasingly important relationship between telecommunications and the computer is the subject of this book. While much of the book is very technical, certain sections can be read without difficulty by the layman. Chapter 1 describes briefly the many uses of the computer in modern society. Other sections describe new developments such as satellites and lasers.

Martin, J., and Norman, Adrian R.D. The Computerized Society. Englewood Cliffs, N.J.: Prentice-Hall, 1970.
In this book two computer systems analysts have explained, in layman's terms, what is happening in the computer industry and laboratories and what impact these events are likely to have upon society. Computerized society is discussed from many perspectives in this book, making it an excellent source of reference.

Parkhill, Douglas F. The Challenge of the Computer Utility. Reading, Mass.: Addison-Wesley Publishing Co., 1966.
This is a college-level book of a specialized nature that may serve as a source of reference for student research.

Pylyshyn, Z.W., ed. Perspectives on the Computer Revolution. Englewood Cliffs, N.J.: Prentice-Hall, 1970.
This book contains thirty-six selections written by pioneers and scholars in the field. Although written by specialists, the book is basically non-mathematical and very readable. Included is a paper written by Charles Babbage in 1864. Also included is an appendix of additional readings classified according to focus of interest.

Randall, Clarence B., and Burgly, Sally Weimer. Systems and Procedures for Business Data Processing. 2nd ed. Cincinnati, Ohio: South-Western Publishing Company, 1968. (In Toronto: W.J. Gage Ltd.).
This book is divided into thirty chapters, each of which gives an independent description of a particular topic. There are two books of laboratory problems and a companion manual.

Robichaud, Beryl. Understanding Modern Business Data Processing. New York: McGraw-Hill Book Company, 1966.
Written as a student text, this book deals with the operational aspects of data processing and includes sections on manual, mechanical, electro-mechanical, and electronic equipment. Also included are detailed descriptions of the more common business applications.

Saxon, James A., and Steyer, Wesley W. Basic Principles of Data Processing. 2nd ed. Englewood Cliffs, N.J.: Prentice-Hall, 1970.
Written as an introductory text, this book provides the reader with a broad overview of the data processing field.

Travis, Irene. The Computer Impact. Englewood Cliffs, N.J.:
Prentice-Hall, 1970.
Twenty-seven different readings make up this book. It offers good
reference material pertaining to the impact of the computer on
society, on culture, and on the economy.

Vorwald, Alan, and Clark, Frank. Computers from Sand Table to
Electronic Brain. 3rd ed. New York: McGraw-Hill Book Company,
1970.
This book includes descriptions of simple electrical devices that
students could build to demonstrate computer circuitry and logic.

Wanous, S.J.; Wanous, E.E.; and Hughes, A.E. Introduction to
Automated Data Processing. Cincinnati, Ohio: South-Western
Publishing Company, 1968. (In Toronto: W.J. Gage Ltd.)
This book discusses automated data processing from the manual
system to the electronic computer. It is accompanied by a
teacher's manual, projects package, study guide, forms, and cards.

Wanous, S.J.; Wanous, E.E.; and Wagner, Gerald E. Fundamentals
of Data Processing. Cincinnati, Ohio: South-Western Publishing
Co., 1971. (In Toronto: W.J. Gage Ltd.)
This comprehensive book is accompanied by an applications package
including forms, punched cards, projects manual, and study guide.

Weiss, Eric A., ed. Computer Usage Fundamentals. New York:
McGraw-Hill Book Company, 1969.
The entire spectrum of the computer field is presented in an
interesting manner in this comprehensive book. Chapter 4 "The
Computer Manufacturing Industry" deals with a topic not often
covered in books of this type.

Weiss, Eric A., ed. Computer Usage Applications. New York:
McGraw-Hill Book Company, 1970.
Seventeen important and interesting computer applications are
included in this book. These applications describe real cases in
non-technical terms and would be useful as supplementary reading.

Wheeler, Gershom J., and Jones, Donlan F. Business Data
Processing: An Introduction. Reading, Mass.: Addison-Wesley
Publishing Company, 1966.
This brief introductory text surveys the field of business data
processing.

Whitworth, D. Basic Digital Computer Concepts. London: Heinemann
Educational Books, 1966. (In Toronto: Bellhaven House.)
This is an introductory partially programmed book written for
quick, easy reading. New concepts are explained in simplified
form.

Withington, Frederic G. The Real Computer: Its influence, uses, and effects. Reading, Mass.: Addison-Wesley Publishing Company, 1969.
Many interesting aspects of the computer resource are examined in this book, which is suitable for additional reading or essay assignments. The text is supplemented by a large number of interesting case histories.

Withington, Frederic G. The Use of Computers in Business Organizations. 2nd ed. Reading, Mass.: Addison-Wesley Publishing Company, 1971.
Chapters 4 and 5 discuss real-time applications. Chapter 9 discusses location and organization of the computer activity as well as personnel requirements.

Booklets

❖ International Business Machines. The Considerations of
Data Security in a Computer Environment.
The many aspects of data security are discussed in the 36-page
booklet. A comprehensive bibliography on the subject is provided.

The National Cash Register Company. Electronic Data Processing
Written for the Layman.
This series of three booklets is available in class sets:
Book 1. What is Data Processing?
Book 2. What is Binary Arithmetic?
Book 3. What is a Computer?

Univac Division of Sperry Rand of Canada. Mighty New Servant to
the Mind of Man.
Twenty-eight pages of interesting and informative commentary
describe the story of electronic computers and their place in the
average person's life.

❖ International Business Machines. More About Computers.
This easy-to-understand 52-page booklet briefly describes such
topics as the evolution of computers, computer logic, and
computer uses.

American Federation of Information Processing Societies.
The Quiet Revolution: Computers Come of Age.
This interesting 12-page booklet outlines the major stages and
events in computer development and briefly discusses input,
storage, processing, and output.

Periodicals

A.E.D.S. Journal (quarterly)
Association for Educational Data Systems, 1201 16th Street, N.W.,
Washington, D.C. 20036.

A.E.D.S. Monitor (monthly)
Association for Educational Data Systems, 1201 16th Street N.W.,
Washington, D.C. 20036.

Business Automation (monthly)
Business Press International, Inc., 288 Park Avenue, West,
Elmhurst, Ill. 60126.

♣ The Business Quarterly (quarterly)
School of Business Administration,
The University of Western Ontario, London, Ontario.

♣ Canadian Chartered Accountant (monthly)
The Canadian Institute of Chartered Accountants,
250 Bloor Street East, Toronto 5, Ontario

♣ Canadian Datasystems (monthly)
Maclean-Hunter Limited, 481 University Avenue, Toronto 101, Ont.

♣ C I P S Magazine (monthly)
Canadian Information Processing Society, Whitsed Publishing Ltd.,
42 Mercer Street, Toronto 135, Ontario.

Computers and Automation (monthly)
Berkeley Enterprises Inc., 815 Washington Street, Newtonville,
Mass. 02160.

Computer Digest (monthly)
American Data Processing Inc., 4th floor, Book Bldg., Detroit,
Michigan 48226.

Computer Education (monthly)
Data Processing Horizons, Inc., P.O. Box 99, South Pasadena,
Calif. 91030.

Computers and the Humanities (5 per year)
Queen's College, Flushing, New York 11367.

Datamation (monthly)
Thompson Division, The Technical Publishing Company, 1301 South
Grove Avenue, Barrington, Ill. 60010.

Data Dynamics (monthly)
North American Publishing Company, 134 North 13th Street,
Philadelphia, Pa. 19107.

Data Management (monthly)
Data Processing Management Association, 505 Bussé Highway, Park
Ridge, Ill. 60068.

Data Processing for Education (monthly)
American Data Processing Inc., 22nd Floor, Book Tower, Detroit,
Michigan 48226.

Data Processing Digest (monthly)
Data Processing Digest Inc., 1140 South Robertson Boulevard,
Los Angeles, Calif. 90035.

Data Systems News (monthly)
United Business Publications, P.O. Box 7387, Philadelphia, Pa.
19101.

Honeywell Computer Journal
Honeywell, Inc., Electronic Data Processing Division, Wellesley
Hills, Mass. 02181.

IBM Data Processor (5 per year)
IBM Corporation, Data Processing Division, 112 East Post Road,
White Plains, N. Y. 10601

Journal of Educational Data Processing (5 per year)
Educational Systems Corporation, Box 2995, Stanford, California
94305.

⊛ Office Administration (monthly)
Southam Business Publications Limited, 1450 Don Mills Road, Don
Mills, Ontario.

Software Age (twice monthly)
Press-Tec, Inc., 1020 Church Street, Evanston, Ill. 60201.

Systems and Procedures Journal (twice monthly)
Systems and Procedures Association, 24587 Bagely Road, Cleveland,
Ohio 44138.

ABC's of Computers (colour), 18 mins. Honeywell Information
Systems, 2025 Sheppard Avenue East, Willowdale, Ontario.
This film, as its name implies, is an introduction to computers
and computer circuitry.

At Home 2001 (colour), 25 mins. Produced by CBS, available from
McGraw-Hill Ryerson Ltd., 330 Progress Avenue, Scarborough, Ont.
This film examines the effect of technology on urban living and
the household of the future.

Best for Beginners (colour), 10 mins. Produced by IBM, available
from Modern Talking Picture Service, Inc., 1875 Leslie Street,
Don Mills, Ontario.
The subject here is the IBM Selectric and its relation to the
Magnetic Tape Selectric Typewriter. It also shows that even the
computer is reached through the typewriter keyboard.

A Better World (colour), 8 mins. Produced by IBM, available from
Modern Talking Picture Service, Inc., 1875 Leslie Street, Don
Mills, Ontario.
This film describes the influence of computers in our daily lives,
in education, medicine, traffic control, and space research.

Beyond All Barriers (colour), 28 mins. Produced by Bell Canada,
available from Modern Talking Picture Service Inc., 1875 Leslie
Street, Don Mills, Ontario.
The role of communication in the development of civilization is
outlined in this film.

Binary Numbers (b/w), 25 mins.
BBC, 135 Maitland Street, Toronto, Ontario.
This film presents a detailed explanation of binary numbers.

This Business of Numbers (colour), 20 mins. Univac Division of
Sperry Rand Canada Limited, 250 Bloor Street East, Toronto, Ont.
This animated film covers the history of numbers from caveman to
the present day in story-telling fashion.

The Catalyst (colour), 13 mins. Univac Division of Sperry Rand
Canada Limited, 250 Bloor Street East, Toronto, Ontario.
Univac real-time capabilities are illustrated by these applica-
tions: Apollo, anti-submarine, warfare, air traffic control,
global weather, forecasting, medical research education.

Census '70 (colour), 10 mins. Univac Division of Sperry Rand
Canada Limited, 250 Bloor Street East, Toronto, Ontario. Produced
in collaboration with the U.S. Bureau of the Census, this film
was shown on television during 1970 as a public service. It
features several close-up views of Univac equipment.

⧫ Collator, Calculator, Accounting Machine (colour), 14 mins.
Moreland-Latchford Educational Films, 43 Dundas Street West,
Toronto, Ontario.
This film demonstrates the use and function of the three machines
mentioned in the title.

⧫ Communication (colour), 20 mins. Produced by Bell Canada,
available from Modern Talking Picture Service Inc., 1875 Leslie
Street, Don Mills, Ontario.
The history of communication is related to the network of
communications media in Canada.

The Communications Explosion (colour), 30 mins. Produced by CBS,
available from McGraw-Hill Ryerson Ltd., Film Division, 330
Progress Avenue, Scarborough, Ontario.
This CBS news presentation shows the proliferation of communica-
tions techniques in the modern world.

The Computer (colour), 10 mins. Produced by AIMS Instructional
Media Services, available from International Tele-Film Enter-
prises, 221 Victoria Street, Toronto, Ontario.
The computer and the ways in which it works with information to
help us in many areas of modern life are described in this film.

Computer Baby (colour), 4 mins. Produced by Pyramid Films,
available from International Tele-Film Enterprises, 221 Victoria
Street, Toronto, Ontario.
This film is a sardonic statement on computer-dating.

Computer Control of a Catalytic Cracker (colour), 9 mins.
Produced by IBM, available from Modern Talking Picture Service,
Inc., 1875 Leslie Street, Don Mills, Ontario
This brief film shows an IBM control system, on-line to the
Standard Oil Company of California's Petroleum Catalytic cracking
unit.

Computer for Apollo (b/w), 28 mins. National Aeronautics and
Space Administration, Washington, D.C. 20546.
This film examines how the Apollo Guidance Computer works and how
it is assembled.

A Computer Glossary (colour), 14 mins.
Produced by IBM, available from Modern Talking Picture Service,
Inc., 1875 Leslie Street, Don Mills, Ontario.
This film begins by taking the audience on a fantastic voyage
inside the complex microcircuitry of a computer. It defines basic
terms such as flowcharts, boolean logic, nanosecond, and
simulation.

Computer Logic: Computer Units (colour), 23 mins. Norwood Studios,
5104 Frohlich Lane, Tuxedo, Md. 20781.
This film discusses the major units of digital computer - input,
output, arithmetic, and control.

Computer Logic: Logic Elements (colour), 20 mins. Norwood
Studios, 5104 Frolich Lane, Tuxedo, Md., 20781.
The development of solid state elements in computer circuitry are
described.

The Computer Revolution (colour), 60 mins. Produced by CBS,
available from McGraw-Hill Ryerson Ltd., Film Division, 330
Progress Avenue, Scarborough, Ontario.
This CBS news feature studies the impact of computers on North
American society.

Conquest of Light (colour), 9 mins. Produced by Bell Canada,
available from Modern Talking Picture Service Inc., 1875 Leslie
Street, Don Mills, Ontario.
The development of the laser and some of its applications are
treated briefly.

◪ Data Processing: Introductory Principles (colour), 14 mins.
Moreland-Latchford Educational Films, 43 Dundas Street West,
Toronto, Ontario.
Basic principles of data processing are described with emphasis
on punch card theory and use.

Dimension of Life (b/w), 16 mins. Produced by IBM, available from
Modern Talking Picture Service Inc., 1875 Leslie Street, Don
Mills, Ontario.
This film portrays the story of braille and shows how the braille
typewriter, developed by IBM, is adding a new dimension to the
lives of the blind.

The Electronic Shelf (colour), 20 mins. Univac Division of Sperry
Rand Canada Limited, 250 Bloor Street East, Toronto, Ontario.
This discussion of information retrieval shows Univac 1107, 490,
and 1050.

Grenoble Winter Olympics (colour), 15 mins. Produced by IBM, available from Modern Talking Picture Service Inc., 1875 Leslie Street, Don Mills, Ontario.
An exciting and highly visual report on the highlights of the 1968 Winter Olympic Games at Grenoble, France. Skiing, jumping, figure skating, bobsled, hockey, speed skating, cross country, and many more events are graphically captured in this film. Also shown is IBM's extensive teleprocessing network which provided results of events.

House of Science (colour), 14 mins. Produced by IBM, available from Modern Talking Picture Service, Inc., 1875 Leslie Street, Don Mills, Ontario.
In this film, scientific procedure is shown to be a natural process arising out of man's curiosity about the world in which he lives.

Information Please (colour), 20 mins. Honeywell Information Systems, 2025 Sheppard Avenue East, Willowdale, Ontario.
This film shows several applications of computers--helping to produce toys, improving instruction techniques in school, helping to launch space ships, preparing better tasting cake mixes, and so forth.

IBM at Expo (colour), 13 mins. Produced by IBM, available from Modern Talking Picture Service, Inc., 1875 Leslie Street, Don Mills, Ontario.
This film shows briefly the principal IBM Expo '67 exhibits, including voice recognition, computer assigned instruction, and light beam transmission.

Impulse 90 (colour), 28 mins. Produced by Cuna Mutual Insurance Co., available from Modern Talking Picture Service, Inc., 1875 Leslie Street, Don Mills, Ontario.
This film explores what life might be like in the cashless, chequeless society.

Incredible Machine (colour), 16 mins. Produced by Bell Canada, available from Modern Talking Picture Service, Inc., 1875 Leslie Street, Don Mills, Ontario.
Bell Laboratories are shown using computers in communications research.

The Information Machine (colour), 10 mins. Produced by IBM, available from Modern Talking Picture Service, Inc., 1875 Leslie Street, Don Mills, Ontario.
This amusing account of the development of the electronic computer begins with primitive man and ends with the advent of machine simulation.

✚ The Interpreter and Control Panel Wiring (colour), 13 mins.
Moreland-Latchford Educational Films, 43 Dundas Street West,
Toronto, Ontario.
The mechanism of the interpreter and wiring of a control panel
for unit record machines are explained graphically.

Introduction to Digital Computers (colour), 24 mins. Univac
Division of Sperry Rand Canada Limited, 250 Bloor Street East,
Toronto, Ontario.
This film examines what a computer is, how it works, and the
benefits it provides to modern society. The five basic functions
-- input, memory, arithmetic, control, and output -- are
illustrated.

Introduction to Feedback (colour, 11½ mins. Produced by IBM,
available from Modern Talking Picture Service, Inc., 1875 Leslie
Street, Don Mills, Ontario.
This film shows the growing importance of feedback in our daily
lives -- the cycle of measuring, evaluating, and correcting.

✚ Lasers Unlimited (colour), 10 mins. Produced by Bell Canada,
available from Modern Talking Picture Service, Inc., 1875 Leslie
Street, Don Mills, Ontario
Uses of lasers are shown in the fields of science, industry and
medicine.

✚ The Living Machine (b/w), 60 mins. National Film Board,
1 Lombard Street, Toronto, Ontario.
The implications of the electronic age are projected into the
future.

Man and Computer...a Perspective (colour), 20 mins. Produced by
IBM, available from Modern Talking Picture Service, Inc.,
1875 Leslie Street, Don Mills, Ontario.
This film introduces some of the basic elements in data process-
ing, such as input, output, storage, and control. In addition,
the binary system is illustrated.

Man and Computer...Today (colour), 11 mins. Produced by IBM,
available from Modern Talking Picture Service, Inc., 1875 Leslie
Street, Don Mills, Ontario.
This film discusses the impact of the computer on our modern
world.

Man and the Real Time World (colour), 25 mins. Univac Division of
Sperry Rand Canada Limited, 250 Bloor Street East, Toronto, Ont.
Univac real-time applications include Ontario Hydro, parimutuel
wagering in Australia, insurance companies in Argentina, and
shipping in Norway.

Manufacturing Competence (colour), 20 mins. Honeywell Information
Systems, 2025 Sheppard Avenue East, Willowdale, Ontario.
This film follows the manufacture and assembly of a computer
system at the General Electric Computer Plant in Phoenix. Female
employees are shown wiring the various circuit boards, assembling
the various components, and testing the finished product. There
are several shots in the staging test area showing a G-265 time-
sharing system.

The Marvelous Calculator (colour), 15 mins. Produced by the
Control Data Institute, available from Modern Talking Picture
Service, Inc., 1875 Leslie Street, Don Mills, Ontario.
This history of calculators ranges from early times to modern
computers.

Mathematical Peep Shows (colour), 13 mins. Produced by IBM,
available from Modern Talking Picture Service, Inc., 1875 Leslie
Street, Don Mills, Ontario.
Several interesting aspects of mathematics are explained --
symmetry, topology, the world of numbers, functions, and the
method used by Eratosthenes to establish the size of the earth.

A Matter of Time (colour), 15 mins.
Produced by Univac Division of Sperry Rand Canada Limited,
250 Bloor Street East, Toronto, Ontario.
A Univac 490 real-time system for handling airline reservations
and ticket transactions is portrayed.

⬕ Memory Devices (colour), 28 mins. Produced by Bell Canada,
available from Modern Talking Picture Service, Inc., 1875 Leslie
Street, Don Mills, Ontario.
The many storage devices used in computers are described.

Movies from Computers (b/w), 20 mins., available from Coronet
Film, Coronet Building 56 East, South Waterstreet, Chicago, Ill.
60601.
The use of computers in film-making is the subject of this film.

⬕ A Nation in Touch (colour), 26 mins. Produced by Bell Canada,
available from Modern Talking Picture Service, Inc., 1875 Leslie
Street, Don Mills, Ontario
This film explores the many natural hazards and obstacles that
had to be overcome in constructing the world's longest microwave
system.

Once Upon a Punched Card (colour), 9 mins. Produced by IBM,
available from Modern Talking Picture Service, Inc., 1875 Leslie
Street, Don Mills, Ontario.
The basic principles of punched-card accounting are explained
clearly and simply.

The Power of Parallel Processing (colour), 10 mins. Honeywell
Information Systems, 2025 Sheppard Avenue East, Willowdale, Ont.
By comparing the Honeywell 800 and 1800 Processors to a toll road
which,by means of multiple toll gates, can handle a large volume
of traffic simultaneously, the film points out how the Models 800
and 1800 can handle five programs simultaneously.

Projection 70's - Communications (colour), 24 mins. Produced by
American Educational Films, available from Bellevue Film
Distributors Ltd., 277 Victoria Street, Toronto, Ontario.
This film examines the many ways in which advances in computer
and communications technology will affect us in the 70's.

✦ Programming the Keypunch (colour), 13 mins. Moreland-Latchford
Educational Films, 43 Dundas Street West, Toronto, Ontario.
This film shows how to use the program drum.

✦ Printing Card Punch (colour), 14 mins. Moreland-Latchford
Educational Films, 43 Dundas Street West, Toronto, Ontario.
The use and operation of the keypunch machine are illustrated.

The Question Tree (colour), 13 mins. Produced by IBM, available
from Modern Talking Picture Service, Inc., 1875 Leslie Street,
Don Mills, Ontario.
Intelligent questioning leads to scientific discovery. Sequences
on cryogenics, language translation, vapour growth, and the optical
laser are included in this film.

✦ Reactive Displays (colour), 10 mins. General Motors Corporation,
Public Relations Department, Oshawa, Ontario.
This film examines the man-machine interface in engineering
design by computer.

✦ The Reproducer (colour), 14 mins. Moreland-Latchford Educational
Films, 43 Dundas Street West, Toronto, Ontario.
Various uses of the reproducer are examined.

❖ Satellite Communications Canada (colour), 13 mins. Produced by
Northern Electric, available from Modern Talking Picture Service,
Inc., 1875 Leslie Street, Don Mills, Ontario.
The role played by Northern Electric research and development in
establishing Canada's communications systems is shown in this
film.

Small Miracle (colour), 14 mins. Produced by IBM, available from
Modern Talking Picture Service, Inc., 1875 Leslie Street, Don
Mills, Ontario.
Such varied subjects as highway design, inventory control,
teaching, and graphic data processing are discussed in this film
which describes man's never-ending search for knowledge and helps
to place modern technology in historical and philosophical
perspective.

❖ The Sorter (colour), 14 mins. Moreland-Latchford Educational
Films, 43 Dundas Street West, Toronto, Ontario.
The use and operation of the sorter are explained.

❖ Then and Now (colour), 12 mins. Univac Division of Sperry Rand
Canada Limited, 250 Bloor Street East, Toronto, Ontario.
In this historical account of the development of the first
electronic computer ENIAC, the two co-inventors, J. Presper
Eckert and Dr. John W. Mauchly, discuss the development of
computer technology.

24 Hours at Le Mans (colour), 15 mins. Produced by IBM, available
from Modern Talking Picture Service, Inc., 1875 Leslie Street,
Don Mills, Ontario.
This film shows how the IBM installation at Europe's foremost
automobile race issued hourly reports on car placement and
performance throughout the race.

❖ Univac Users (b/w), 14 mins. Univac Division of Sperry Rand
Canada Limited, 250 Bloor Street East, Toronto, Ontario.
A number of Univac installations, including those at Bell Canada,
Ontario Hydro, and Metro Toronto Traffic Control Centre, are
shown and discussed.

Universe of Numbers (b/w), 30 mins. Produced by IBM, available
from Modern Talking Picture Service, Inc., 1875 Leslie Street,
Don Mills, Ontario.
This film traces the development of the computer from the first
mechanical calculator invented by Blaise Pascal in the 17th
century to ENIAC, the first completely electronic calculator
built in the mid 1940's by John Mauchly and J. Presper Eckert.

What is a Computer (colour), 19 mins. Produced by Argo Record
Company, available from Encyclopaedia Britannica Publications
Ltd., 151 Bloor Street West, Toronto, Ontario.
The basic ideas of computer operations and the computer's main
functions are shown in this animated film. "Planning for space
travel" is the example used for illustration.

What Happened to Mr. Bell's Cheque? (colour), 15 mins. Honeywell
Information System, 2025 Sheppard Avenue East, Willowdale, Ont.
The processing of MICR-enclosed cheques in a demand deposit
accounting system is examined.

⬤ What on Earth (colour), 10 mins. National Film Board, 1 Lombard
Street, Toronto, Ontario.
Students will find a Martian's view of life on earth amusing.

You and the Computer (colour), 9 mins. Honeywell Information
Systems, 2025 Sheppard Avenue East, Willowdale, Ontario.
This film illustrates with live action and animation the concept,
"The computer works the same way you do." It shows input and out-
put, explains the need for a program, illustrates a simple
program, and concludes with a summary of the key points.

Zero Hour (colour), 17 mins. Produced by the Control Data Insti-
tute, available from Modern Talking Picture Service, Inc., 1875
Leslie Street, Don Mills, Ontario.
Many students will want information about the training needed to
qualify as a computer programmer or a computer technician.

Other Learning Resources

A catalogue entitled Audio Visual Aids for Data Processing Systems
is available from Data Processing Management Association,
505 Busse Highway, Park Ridge, Illinois 60068.
A number of film titles are listed in it.

A catalogue entitled Guide to Data Education Films compiled by
Mary Robek is available from the Society of Data Educators,
Arthur H. Pike, Monograph Editor, Norwich University, Northfield,
Vermont 05663.

✦ A series of ten television programs on data processing is shown
at regular intervals by the Ontario Educational Communications
Authority over a provincial network. For detailed information
teachers should refer to the Program Schedule and Teachers' Guide
published by the O.E.C.A.

✦ Bell Canada has prepared a teaching aid to computer programming
called CARDIAC (cardboard illustrative aid to computation).
This cardboard device is designed to illustrate the simple opera-
tions of a computer. A teacher's guide with transparencies is
available.

A "Basic Computer Training" unit, developed by Self-Instructional
Development Corporation, is available from Sir Isaac Pitman
Canada Limited, 495 Wellington Street West, Toronto, Ontario.
This training unit consists of ten cassettes (20 lessons) to be
used in conjunction with a companion workbook of illustrations.
Each lesson examines a particular aspect of the computer, making
it suitable for independent study.

✦ A 33 1/3 r.p.m. recording on Careers for Young Canadians: Data
Processing is available from McGraw-Hill Ryerson Ltd., 330
Progress Avenue, Scarborough, Ontario.
Side 1 (20 mins.) offers commentary to accompany a filmstrip
outlining a number of career opportunities. Side 2 (20 mins.)
presents a panel discussion on which two officers of the
Information Processing Society of Canada answer questions put to
them by a group of young men and women.

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